

What is claimed is:

1        1. A load dispersion-type duplex communication system  
2 comprising:  
3              duplexed transmission devices;  
4              wherein, whether each of said transmission devices is in  
5 an overload state or in an allowable load state is judged and said  
6 transmission device judged as being in said allowable load state  
7 performs a duplex operation with another transmission device and  
8 said transmission device being judged as being in said overload  
9 state performs a single and work-dividing operation with said  
10 other transmission device.

1        2. The load dispersion-type duplex communication system  
2 according to Claim 1, wherein each of said transmission devices  
3 judges, for itself, whether each of said transmission devices is  
4 in said overload state or in said allowable load state and does  
5 automatically switching between said duplex operation and said  
6 single and work-dividing operation.

1        3. The load dispersion-type duplex communication system  
2 according to Claim 1, wherein, whether said each of said  
3 transmission devices is in said overload state or in said  
4 allowable state is judged based on a data storage capacity of said  
5 each of said transmission devices.

1        4. The load dispersion-type duplex communication system  
2 according to Claim 1, wherein a control is made in a manner to  
3 set an overload threshold value used to judge whether said each

4 of said transmission devices is in said overload state or not and  
5 an allowable load threshold value used to judge whether said  
6 allowable load is below said overload threshold value or not.

1       5. The load dispersion-type duplex communication system  
2 according to Claim 1, wherein, whether said each of said  
3 transmission devices is in said overload state or in said  
4 allowable state is judged based on an amount of changes in data  
5 storage capacity within a predetermined period of time in each  
6 of said transmission devices.

1       6. The load dispersion-type duplex communication system  
2 according to Claim 1, wherein either of data processed by two said  
3 transmission devices performing said duplex operation is selected  
4 and processed by a low-order transmission device on a transmission  
5 path and wherein if judged to be in said overload state, data  
6 processed by two said transmission devices performing said single  
7 and work-dividing operation is multiplexed and processed by a  
8 low-order transmission device on said transmission path.

1       7. The load dispersion-type duplex communication system  
2 according to Claim 6, wherein said each of said transmission  
3 devices is provided with a unit used to judge whether said each  
4 of said transmission devices is in said overload state or in said  
5 allowable load state and said each of said transmission devices,  
6 in accordance with a judgement by said each of said transmission  
7 devices, automatically does switching between said duplex  
8 operation and said single and work-dividing operation and then  
9 provides an instruction for said switching to another

10 transmission device of a same order on a transmission path and  
11 a low-order transmission device on said transmission path.

1        8. The load dispersion-type duplex communication system  
2 according to Claim 6, wherein, whether said each of said  
3 transmission devices is in said overload state or in said  
4 allowable state is judged based on a data storage capacity of said  
5 each of said transmission devices.

1        9. The load dispersion-type duplex communication system  
2 according to Claim 6, wherein a control is made in a manner to  
3 set an overload threshold value used to judge whether said each  
4 of said transmission devices is in said overload state or not and  
5 an allowable load threshold value used to judge whether said  
6 allowable load is below said overload threshold value or not.

1        10. The load dispersion-type duplex communication system  
2 according to Claim 6, wherein, whether said each of said  
3 transmission devices is in said overload state or in said  
4 allowable state is judged based on an amount of changes in data  
5 storage capacity within a predetermined period of time in each  
6 of said transmission devices.

1        11. A load dispersion-type duplex communication system  
2 comprising:  
3            a received data selecting and multiplexing section;  
4            a memory section used to store, on a temporary basis, data  
5 fed from said received data selecting and multiplexing section;  
6            a transmission path interfacing section;

7 a load detecting section used to compare data amounts  
8 accumulated in said memory section with a threshold value and  
9 a controller used to control each of said received data  
10 selecting and multiplexing section, said memory section, said  
11 transmission path interface section, and said load detecting  
12 section in accordance with results of the comparison by said load  
13 detecting section and to do switching between a duplex operation  
14 and single and work-dividing operation.